

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A ~~MEMS~~ ink jet printhead comprising:
a silicon CMOS substrate having a plurality of nozzles;
each nozzle comprising:
a chamber ~~corresponding to each of the nozzles respectively, the chambers adapted~~
to contain an ejectable liquid; and,
at least one droplet ejection actuator associated with each of the chambers
respectively, the droplet ejection actuator being adapted to eject a droplet of the ejectable
liquid from the nozzle;
-wherein,
the chambers ~~is~~ are mounted on the silicon CMOS substrate and are at least partially formed
by an amorphous ceramic material.
2. (Currently amended) An ink jet printhead according to claim 1 wherein the drop
ejection actuator is a heater element configured for thermal contact with a bubble forming
liquid within the chamber; such that,
heating the heater element to a temperature above the boiling point of the bubble forming
liquid forms a gas bubble that causes the ejection of a droplet of the ejectable liquid ~~through~~
from the nozzle corresponding to that heater element.
3. (Original) An ink jet printhead according to claim 1 wherein the amorphous ceramic
material is silicon nitride.
4. (Original) An ink jet printhead according to claim 1 wherein the amorphous ceramic
material is silicon dioxide.
5. (Original) An ink jet printhead according to claim 1 wherein the amorphous ceramic
material is silicon oxynitride.

6. (Original) An ink jet printhead according to claim 2 wherein the ejectable liquid is the same as the bubble forming liquid.

7 (Original) An ink jet printhead according to claim 1 wherein the printhead is a pagewidth printhead.

8. (Withdrawn) An ink jet printhead according to claim 1 wherein the droplet ejection actuator is a paddle vane located within the chamber, the paddle vane being adapted to be actuated by a thermal actuator for ejecting a droplet of the ejectable liquid;

a thermal actuator located externally of the chamber and attached to the paddle vane, wherein the thermal actuator includes a plurality of separate spaced apart elongate thermal actuator units, which are interconnected at a first end to a substrate and at a second end to a rigid strut member.

9. (Withdrawn) An ink jet printhead as claimed in claim 8 wherein the rigid strut member is connected to a lever arm having one end attached to the paddle vane.

10. (Withdrawn) An ink jet printhead as claimed in claim 1 wherein the thermal actuator units operate upon conductive heating along a conductive trace, the conductive heating including generation of a substantial portion of the heat in an area adjacent the first end of each thermal actuator unit.

11. (Withdrawn) An ink jet printhead as claimed in claim 4 wherein said conductive heating includes a thinned cross-section adjacent said first end.

12. (Withdrawn) An ink jet printhead as claimed in claim 1 wherein the thermal actuator units comprise conductive heating layers which, in turn, comprise substantially either a copper nickel alloy or titanium nitride.

13. (Currently amended) A printer system which incorporates a MEMS inkjet printhead, the printhead comprising a silicon CMOS substrate having ÷
a plurality of nozzles, each nozzle comprising:÷

~~a bubble forming chamber corresponding to each of the nozzles respectively, the bubble forming chambers adapted to contain a bubble forming liquid; and,~~

at least one heater element disposed in each of the bubble forming chambers respectively, the heater elements configured for thermal contact with the bubble forming liquid; such that,

heating the heater element to a temperature above the boiling point of the bubble forming liquid forms a gas bubble that causes the ejection of a drop of an ejectable liquid ~~through~~ from the nozzle corresponding to that heater element,

;-wherein;

the bubble forming chambers are mounted on the silicon CMOS substrate ~~is-and are~~ at least partially formed by an amorphous ceramic material.

14. (Cancelled)

15. (Original) A printer system according to claim 13 wherein the amorphous ceramic material is silicon nitride.

16. (Original) A printer system according to claim 13 wherein the amorphous ceramic material is silicon dioxide.

17. (Original) A printer system according to claim 13 wherein the amorphous ceramic material is silicon oxynitride.

18. (Original) A printer system according to claim 14 wherein the ejectable liquid is the same as the bubble forming liquid.

19 (Original) A printer system according to claim 13 wherein the printhead is a pagewidth printhead.

20. (Withdrawn) A printer system according to claim 13 wherein the droplet ejection actuator is a paddle vane located within the chamber, the paddle vane being adapted to be actuated by a thermal actuator for ejecting a droplet of the ejectable liquid;

a thermal actuator located externally of the chamber and attached to the paddle vane, wherein the thermal actuator includes a plurality of separate spaced apart elongate thermal actuator units, which are interconnected at a first end to a substrate and at a second end to a rigid strut member.

21. (Withdrawn) A printer system as claimed in claim 20 wherein the rigid strut member is connected to a lever arm having one end attached to the paddle vane.

22. (Withdrawn) A printer system as claimed in claim 13 wherein the thermal actuator units operate upon conductive heating along a conductive trace, the conductive heating including generation of a substantial portion of the heat in an area adjacent the first end of each thermal actuator unit.

23. (Withdrawn) A printer system as claimed in claim 16 wherein said conductive heating includes a thinned cross-section adjacent said first end.

24. (Withdrawn) A printer system as claimed in claim 13 wherein the thermal actuator units comprise conductive heating layers which, in turn, comprise substantially either a copper nickel alloy or titanium nitride.

25. (Currently amended) A method of ejecting drops of an ejectable liquid from a MEMS inkjet printhead, the printhead comprising a silicon CMOS substrate having a plurality of nozzles, each nozzle comprising;

a chamber ~~corresponding to each of the nozzles respectively, the chambers adapted~~ to contain an ejectable liquid; and,

at least one droplet ejection actuator associated with each of the chambers respectively,

;~~wherein,~~

the chambers is are mounted on the silicon CMOS substrate and are at least partially formed by an amorphous ceramic material;

the method comprising the steps of:

placing the ejectable liquid into contact with the drop ejection actuator; and

actuating the droplet ejection actuator such that a droplet of an ejectable liquid is ejected ~~through~~ from the corresponding nozzle.

26. (Currently amended) A method according to claim 25 wherein the drop ejection actuator is a heater element configured for thermal contact with a bubble forming liquid within the chamber; such that,

heating the heater element to a temperature above the boiling point of the bubble forming liquid forms a gas bubble that causes the ejection of a droplet of the ejectable liquid ~~through~~ from the nozzle corresponding to that heater element.

27. (Previously presented) A method according to claim 25 wherein the amorphous ceramic material is silicon nitride.

28. (Previously presented) A method according to claim 25 wherein the amorphous ceramic material is silicon dioxide.

29. (Previously presented) A method according to claim 25 wherein the amorphous ceramic material is silicon oxynitride.

30. (Previously presented) A method according to claim 26 wherein the ejectable liquid is the same as the bubble forming liquid.

31. (Currently amended) A method according to claim 25 wherein the printhead is a pagewidth printhead.

~~32. 33.~~ (Withdrawn) A method according to claim 25 wherein the droplet ejection actuator is a paddle vane located within the chamber, the paddle vane being adapted to be actuated by a thermal actuator for ejecting a droplet of the ejectable liquid;

a thermal actuator located externally of the chamber and attached to the paddle vane, wherein the thermal actuator includes a plurality of separate spaced apart elongate thermal actuator units, which are interconnected at a first end to a substrate and at a second end to a rigid strut member.

~~33. 34.~~ (Withdrawn) A method as claimed in claim ~~32~~³¹ wherein the rigid strut member is connected to a lever arm having one end attached to the paddle vane.

~~34. 35.~~ (Withdrawn) A method as claimed in claim 25 wherein the thermal actuator units operate upon conductive heating along a conductive trace, the conductive heating including generation of a substantial portion of the heat in an area adjacent the first end of each thermal actuator unit.

35.36. (Withdrawn) A method as claimed in claim 29 wherein said conductive heating includes a thinned cross-section adjacent said first end.

36.37. (Withdrawn) A method as claimed in claim 25 wherein the thermal actuator units comprise conductive heating layers which, in turn, comprise substantially either a copper nickel alloy or titanium nitride.